IN THE CLAIMS

1. (currently amended) A method for manufacturing a surface mountable laminated circuit protection device, comprising the steps of :

providing a double-sided metal foil clad substrate comprising a first metal layer, a first insulating layer disposed on said first metal layer and a second metal layer disposed on said first insulating layer, wherein said first metal layer and said second metal layer are conducted to each other by a plated through hole which penetrates through said first insulating layer, said first metal layer is further divided into a first unit and a second unit, and said first unit and said second unit are separated and insulated from each other;

performing a composite electroplating process with carbon black to said second metal layer, so that a composite electroplated layer including carbon black and metal is formed on said surface of said second metal layer;

laminating a first conductive composite material having PTC characteristics and a metal foil onto said ~~second metal~~ composite electroplated layer in sequence by a thermal laminating process for jointing said first conductive composite material having PTC characteristics and said second metal layer, wherein said metal foil is further jointed with said first conductive composite material having PTC characteristics, and a multi-layer laminated circuit structure thus is formed and said metal foil is taken as a third metal layer;

performing an isolating process to said third metal layer for forming a third unit and a fourth unit in said third metal layer; and

setting a first conducting unit for conducting said third unit of said third metal layer and said first unit of said first metal layer, and further setting a second conducting unit for conducting said fourth unit of said third metal layer and said second unit of said first metal layer.

2. (original) The method according to Claim 1, wherein an etch process is performed to form a first isolation trench separating said first unit of said first metal layer and said second unit of said first metal layer.

3. (original) The method according to Claim 2, further comprising a step of filling said first isolation trench with an insulating material.

4. (original) The method according to Claim 1, further comprising a step for disposing a second conductivity composite material layer having PTC characteristics under said first metal layer.

5. (original) The method according to Claim 1, wherein the composite electroplating process is performed by using an electroplating solution comprising boric acid, carbon black and nickel.

6. (original) The method according to Claim 5, wherein the composite electroplating process is performed at approximately 35°C.

7. (original) The method according to Claim 5, wherein the composite electroplating process is performed for approximately 10 minutes.

8. (original) The method according to Claim 5, wherein the composite electroplating process is performed by using a current with a current density 3A/dm2.

9. (original) The method according to Claim 1, further comprising a cathode degreasing step with a solvent performed before the composite electroplating process, and the solvent is prepared by adding 60 grams of degreasing agent to 1 liter of deionized water.

10. (original) The method according to Claim 1, wherein the first conductive composite material is a conductive crystallized polymeric composite material filled with carbon black.

11. (original) The method according to Claim 1, wherein the first conductive composite material comprises a material selected from the group consisting of polyethylene, polypropylene, polyvinyl fluoride and copolymers.

12. (withdrawn) A method for manufacturing a surface mountable laminated circuit protection device, comprising the steps of:

providing a bottom metal layer comprising a first unit and a second unit, wherein said first unit and said second unit are separated and insulated from each other;

forming a strengthened insulating layer on said bottom metal layer;

forming a first conductive layer on said strengthened insulating layer;

forming a first conducting mechanism for electrically connecting said first conductive layer and said second unit of said bottom metal layer through said strengthened insulating layer;

forming a composite electroplated layer with carbon black on said first conductive layer;

forming a first conductive composite material layer having PTC characteristics on said composite electroplated layer and jointed with said first conductive layer by means of said composite electroplated layer with carbon black;

forming a top metal layer disposed on said first conductive composite material layer having PTC characteristics; and

forming a second conducting mechanism penetrating through said first conductive composite material layer having PTC characteristics and said strengthened insulating layer for electrically connecting said top metal layer and said first unit of said bottom metal layer.

13. (withdrawn) The method according to Claim 12, wherein an etch process is perform to form a first isolation trench separating said first unit of said bottom metal layer and said second unit of said bottom metal layer.

14. (withdrawn) The method according to Claim 13, further comprising a step of filling said first isolation trench with an insulating material.

15. (withdrawn) The method according to Claim 12, wherein the composite electroplated layer is formed by an electroplating process using a solution comprising boric acid, carbon black and nickel.

16. (withdrawn) The method according to Claim 15, wherein the electroplating process is performed at approximately 35°/C.

17. (withdrawn) The method according to Claim 15, wherein the electroplating process is performed for approximately 10 minutes.

18. (withdrawn) The method according to Claim 15, wherein the electroplating process is performed using a current with a current density $3A/dm^2$.

19. (withdrawn) The method according to Claim 12, further comprising a cathode degreasing step with a solvent performed before the composite electroplating process, and the solvent is prepared by adding 60 grams of degreasing agent to 1 liter of deionized water.

20. (withdrawn) The method according to Claim 12, wherein the first conductive composite material is a conductive crystallized polymeric composite material filled with carbon black.